

In the Claims

Claims 1-61 (canceled).

Claim 62 (currently amended). A method of processing colloidal size polytetrafluoroethylene resin particles by plug flow in an unmelted state while in a hydrostatic coalescible condition to produce biaxially-planar oriented structures comprising the steps of:

- a. releasing said colloidal size polytetrafluoroethylene resin particles from coagulated dispersion aggregates at high shear in a solvent to create a mixture, wherein said particles are approximately 5 to 10 microns in size and said solvent is capable of wetting polytetrafluoroethylene surfaces;
- b. subjecting said mixture to high shear mixing;
- c. filtering said mixture to retain approximately 17 to 20 percent liquid to form a hydrostatic pressure coalescible filter cake; and
- d. processing said filter cake, said processing step comprising
 - i) first uniaxially paste extruding said filter cake composition to produce a uniaxial planar oriented polytetrafluoroethylene structure having longitudinal stress, containing approximately 17 to 20 percent lubricant; and
 - ii) applying a means of re-orienting said uniaxially planar oriented polytetrafluoroethylene structure containing approximately 17 to 20 percent lubricant approximately 90 degrees to the initial uniaxial extrusion direction, wherein said means of re-orienting imparts a transverse stress to said structure, wherein said means of re-orienting comprises a single step of re-orientation for a sufficient period of time so that the transverse stress imparted by said re-orienting and the longitudinal stress imparted by said uniaxial paste extrusion are about equal.

Claim 63 (previously presented). The method of claim 62 wherein the means of re-orienting is rolling.

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Claim 64 (previously presented). The method of claim 62 wherein said means of re-orienting is calendaring.

Claim 65 (previously presented). The method of claim 62 wherein the means of re-orienting is blowing.

Claim 66 (previously presented). The method of claim 62 wherein the means of re-orienting is re-extrusion.

Claim 67 (previously presented). The method of claim 62 wherein said biaxial planar oriented polytetrafluoroethylene structure is a sheet.

Claim 68 (previously presented). The method of claim 62 wherein biaxial planar oriented polytetrafluoroethylene structure is a tube.

Claim 69 (previously presented). The method of claim 68 further comprising:

- e) slitting said biaxial planar oriented polytetrafluoroethylene tubular structure; and
- f) laying open said structure to form a sheet.

Claim 70 (previously presented). The method of claim 62 further comprising the step after step h of:

- c. adding solid particles approximately less than 25 microns in size during mixing to consist of up to 90 percent of a total solids volume.

Claims 71-81 (canceled).

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Claim 82 (previously presented). The method of claim 67 wherein said subjecting step further comprises adding solid particles approximately less than 25 microns in size during mixing to consist of up to 90 percent of a total solids volume, said means of re-orienting is rolling; and

laminating said rolled biaxial planar oriented polytetrafluoroethylene structure by compression.

Claim 83 (previously presented). The method of claim 67 wherein said means of re-orienting is calendering, wherein said subjecting step further comprises adding solid particulates approximately less than 25 microns in size during mixing to consist of up to 90 percent of a total solids volume, and laminating said calendered biaxial planar oriented polytetrafluoroethylene structure by compression.

Claim 84 (previously presented). The method of claim 67 wherein said means of re-orienting is re-extrusion, wherein said subjecting step further comprises adding solid particulates approximately less than 25 microns in size during mixing to consist of up to 90 percent of a total solids volume, and laminating said re-extruded biaxial planar oriented polytetrafluoroethylene structure by compression.

Claim 85 (previously presented). The method of claim 82 wherein said compression is at a pressure ranging from 100 to 1,000 psi.

Claim 86 (previously presented). The method of claim 83 wherein said compression is at a pressure ranging from 100 to 1,000 psi.

Claim 87 (previously presented). The method of claim 84 wherein said compression is at a pressure ranging from 100 to 1,000 psi.

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Claim 88 (previously presented). The method of claim 82 further comprising applying heat up to 300 degrees Centigrade to the laminated, rolled biaxial planar oriented PTFE structure to plasticize and assist the forming and shaping of the sheet.

Claim 89 (previously presented). The method of claim 83 further comprising applying heat up to 300 degrees Centigrade to the laminated, calendered biaxial planar oriented PTFE structure to plasticize and assist the forming and shaping of the sheet.

Claims 90-106 (canceled).

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